

AMENDMENT

In The Claims:

Please amend the claims as follows:

Claim 1. (Currently amended) An electrostatic discharge (ESD) protection circuit, comprising:

 a silicon controlled rectifier (SCR)-~~circuit~~, which comprises a first connection terminal, a second connection terminal, and a third connection terminal, wherein the first connection terminal and the second connection terminal are respectively and directly connected to an I/O pad and a ground voltage, so as to discharge the electrostatic charges;

 an anti-latch-up circuit, which comprises a fourth connection terminal directly connected to a voltage source, a fifth connection terminal directly coupled to the ground voltage, and a sixth connection terminal directly connected to the third connection terminal of the SCR-~~circuit~~, wherein the anti-latch-up circuit consists of a capacitor and a resistor, a first end of the resistor is directly connected to the fourth connection terminal, a second end of the resistor is directly connected to the sixth connection terminal, a first contact end of the capacitor is directly connected to the sixth connection terminal and a second contact end of the capacitor is directly connected to the fifth connection terminal; and

 a first diode, having an anode directly connected to the I/O pad and a cathode directly connected to the fourth connection terminal, wherein when an over positive voltage does not occur on the I/O pad, the first diode is not conducted, and the anti-latch-up circuit substantially generates an anti-latch-up signal to the third connection terminal of the SCR-~~circuit~~ according to the voltage source so as to prevent latching up of the SCR-~~circuit~~ during normal operation, and when the over positive voltage occurs on the I/O pad, the first diode is conducted, and the anti-latch-up circuit does not substantially generate the anti-latch-up signal in response to the conduction of the first diode.

Claim 2. (Previously presented) The ESD protection circuit of claim 1, further comprising:

a second diode, having a first input end and a second input end, respectively connected to the ground voltage and the I/O pad.

Claim 3. (Currently amended) The ESD protection circuit of claim 1, wherein the SCR ~~circuit~~ comprises:

- a P-type substrate;
- an N well, formed in the p-type substrate;
- a first P+ doped region, formed in the P-type substrate and coupled to the ground voltage;
- a first N+ doped region, formed in the P-type substrate, adjacent to the first P+ doped region, and coupled to the ground voltage;

- a second N+ doped region, formed between the P-type substrate and the N well, adjacent to the first N+ doped region, coupled via the third connection terminal of SCR ~~circuit~~ to the sixth connection terminal of the anti-latch-up circuit, serving as a guard ring to collect electrons to avoid latch up when the anti-latch-up circuit sends the anti-latch-up signal through the sixth connection terminal to the third connection terminal of the SCR ~~circuit~~ during normal operation, and floating when the anti-latch-up circuit sends no signal to the SCR ~~circuit~~ during an ESD event;

- a second P+ doped region, formed in the N well, adjacent to the second N+ doped region, and coupled to the I/O pad; and

- a third N+ doped region, formed in the N well, adjacent to the second P+ doped region, and coupled to the voltage source;

wherein a diode is coupled to the second P+ doped region and the I/O pad at one end and coupled to the other end.

Claims 4 – 12 (Canceled)

Claim 13. (Currently amended) The ESD protection circuit of claim 1, wherein the anti-latch-up signal sent from the sixth connection terminal to the SCR ~~circuit~~ comprises a voltage signal.

Claim 14. (Canceled)

Claim 15. (Previously Presented) The ESD protection circuit of claim 1, wherein a RC delay time of the anti-latch-up circuit is smaller than a voltage rising time of an IC power but greater than a voltage rising time of an ESD pulse.